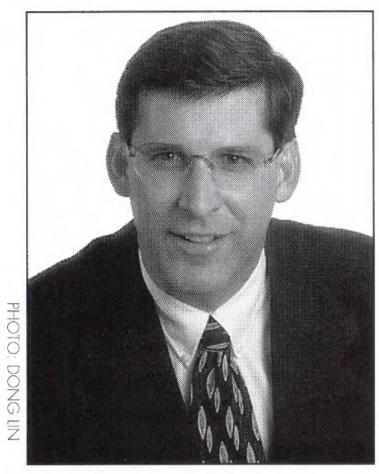


# It's Official:

# The Academy is on San Francisco's March 2000 ballot!



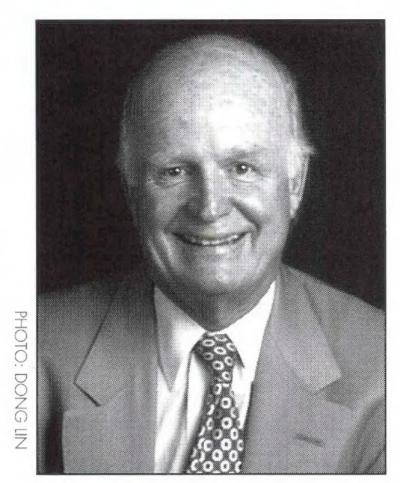
Dr. Patrick Kociolek

After years of planning and assessment, the Academy has qualified a bond measure for the March 7, 2000 ballot in San Francisco. In a rare show of unanimity, all eleven members of the San Francisco Board of Supervisors publicly endorsed bond legislation that would put an \$87 million dollar bond on the ballot. From our main sponsor, Supervisor Michael Yaki, to Board Finance Committee Chair Leland Yee

and Board President Tom Ammiano, the Board has shown its commitment to our goal of rebuilding the Academy. With so much diversity and differences of opinion among members of the Board, it is rare to get agreement from all eleven on any single issue.

This is just the first step, however.

Bond measures must be approved by more than 2/3 of voters. Our challenge is to ensure that more than 66% of voters going to the polls say "yes" to the Academy. Our bond campaign team is hard at work gathering support for the bond. We are speaking directly to individual voters as well as elected officials and community leaders. Our message is



Richard Bingham

simple: we need to make the Academy a safer place to learn.

Funds from the bond, if passed, will be combined with private donations and money from the state and federal government to reach the total capital required. While the Academy has received enthusiastic support of elected officials, community leaders and friends, the task of passing the bond will be challenging. You can help get

our message out to voters. Here's how: volunteer for the campaign and make get-out-the-vote calls, walk precincts or staff information tables; write letters supporting the bond to our local newspapers, the *San Francisco Chronicle*, *Examiner*, *Independent*, *Bay Guardian* or *SF Weekly* or hang a campaign sign in your window. If you're a member of a San Francisco neighborhood or political club, please let us know.

Your support is essential. Please contact Meagan Levitan in Public Relations (415) 750-7295 if you are interested in volunteering or for more information.

See you on the campaign trail!

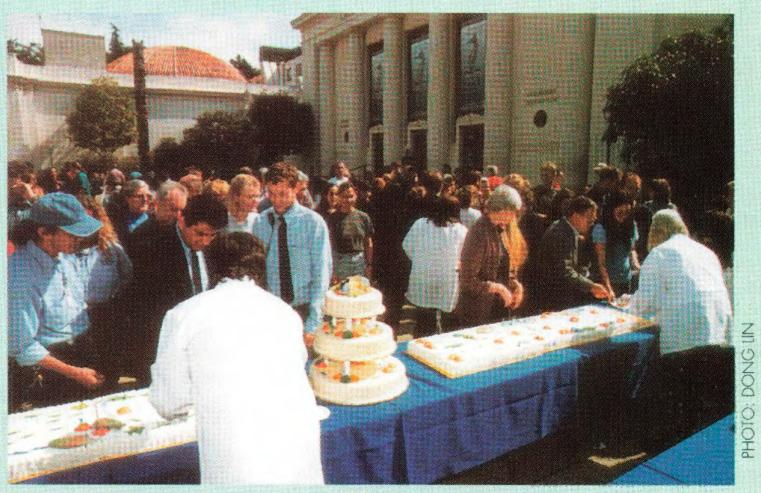
# Steinhart Aquarium Celebration

September was the month to celebrate the 75th anniversary of the Steinhart Aquarium. On September 16, San Francisco's Mayor Willie Brown read a proclamation to guests and Academy staff members declaring the entire month "Steinhart Aquarium Month." A similar proclamation by the California State Assembly was read by Assembly Member Kevin Shelley of San Francisco. For the commemoration, Donning Publishing released The History of Steinhart Aquarium: A Very Fishy Tale,\* by Dr. John McCosker, former Steinhart Director and current Chairman of Aquatic Biology.

The Aquarium was "awash" with nostalgic sentiment as Dr. Patrick Kociolek, Executive Director, and Robert Jenkins, Director of Steinhart Aquarium, received the dignitaries and about 200 additional guests at a reception and book signing that followed. On September 23, a grand cake with marzipan seaweed and chocolate starfish was enjoyed by members of the public in the Central Courtyard in front of the Aquarium.

The Steinhart looks forward to providing San Franciscans

and visitors another 75 years of face to face encounters with electric eels, giant catfish, and snapping turtles.



A Fishy Celebration

\*The illustrated large-format book, *The History of Steinhart Aquarium:* A Very Fishy Tale, may be ordered from the Academy by calling Stephanie Gantt at (415) 750-7216.

# ONE CONTINENT + MANY WORLDS

# Ford Motor Company,

TIME

Made possible by Ford Motor Company and TIME Magazine.

Until January 9, 2000

Derived from a permanent exhibition at Chicago's Field Museum of Natural History, this exhibit offers visitors a unique opportunity to experience the family life, art, and ecology of Africa. Journey to the grassy fields of the Democratic Republic of the Congo (formerly Zaire), join a caravan with the Tuareg people across the Sahara Desert, and walk the bustling streets of Dakar, Senegal. Survey the major art-producing regions of Cameroon and explore the Great Rift in East Africa.

More than 150 artifacts and objects convey Africa's ecology, family life, art, and commerce, from both contemporary and



The replicated hold of a slave ship creates a frame of reference for a clearer understanding of the transatlantic slave trade. As spotlights illuminate the silhouettes of enslaved Africans, the voices of the slaves relate their stories in different African languages.

#### On Our Cover

Photo of Princess Louisa Inlet in British Columbia taken by Steinhart Aquatic Biologist Mike Boyle on an Academy trip to the Pacific Northwest. The Academy offers fascinating excursion to every corner of the globe. To learn more about these informative and exciting trips, see page 15.

#### African Nights: Southern Skies and Myths

This new Planetarium show is offered on weekends and holidays. See the heavens through the eyes of the Zulu, Xhosa, San, and other peoples of southern Africa, and discover the secrets that can be learned on clear, dark African Nights.

For more information, refer to the Planetarium schedule on page 12.

#### New African Beadwork Exhibit

A new exhibit of African beadwork from the Academy's Anthropology collection is on display in Wattis Gallery.

#### Academy Research in Africa Highlighted

The entrance to African Hall highlights the ongoing research of six Academy scientists who focus much of their energy studying the plant and animal life of Africa. African Hall is also the new home to *Doing Science: Madagascar*, a lively interactive kiosk that uses multimedia to reveal discoveries made by Academy scientists while on expeditions to the world's fourth largest island.

#### More on Africa

Be sure to check out the Biodiversity Resource Center on the main floor, as well as the Academy website. Both offer fantastic resources for more information on the natural and cultural history of the African continent.

# Coming Sssoon!

The Academy's next temporary exhibit promises to be a "killer" presentation. That's because the subject is venomous animals. Academy scientists and staff are currently working hard behind the scenes to develop an exhibit which will feature live animals that use venom as a strategy for defense or for capturing prey.

Venom has evolved in a surprisingly diverse group of organisms, from insects, to reptiles to fishes. Many of these animals will be displayed live in the exhibit, along with fascinating videos and interactives that will help visitors understand how venoms are delivered by different animals, how they affect their victims, and how some non venomous animals find protection by masquerading as their venomous cousins.

Watch for this deadly but beautiful exhibit opening in March.

# Opening of Africa: One Continent. Many Worlds.

he royal regalia of the Kingdom of Bamum in Cameroon; riding the city bus in Dakar, Senegal; dinner under the stars in a Tuareg encampment; and the agony of the Africa slave ship—these are some of the many cultural contrasts presented in the Academy's new exhibit, Africa: One Continent. Many Worlds., which opened on October 7. Africa, a gigantic continent that could easily accommodate all the land mass of the continental United States, China, India, and Europe combined, presently contains many countries speaking 800 languages. Its ecological zones range from the steamy cloud forests of Rwanda to the snows of Kilamanjaro, from the bone dry Libyan desert to the temperate grasslands of South Africa. The Academy's newest visiting exhibition provides the visitor with a comparative cultural perspective in which to view the great continent.



The ribbon is cut for AFRICA: One Continent. Many Worlds.

The exhibit opening at the Academy in October was attended by several African diplomatic representatives, leaders of the African American community, and representatives of the exhibit's corporate sponsorship: Ford Motor Company was represented by Bill Peffer, California Region Ford Division. Tom Petersen represented TIME Magazine in the San Francisco Region. Africa is also generously sponsored by local radio station, KBLX.

The exhibition was adapted for the Academy in consultation with the Citizens Advisory Committee, a group of African American educators, artists, and political leaders from around the Bay Area. In coordination with the new exhibit, African Hall and other galleries at the Academy have been enhanced with new exhibitry. Morrison Planetarium has a new program on the African skies, Adult and Junior Academy and the Traditional Art Programs are offering classes and demonstrations on the material and performance arts of various African cultures throughout the fall. The Academy wishes to thank Ford Motor Company, TIME Magazine, KBLX, the Citizens Advisory Committee, and all the other energetic groups and individuals who have contributed to the great success of Africa: One Continent. Many Worlds. The exhibit runs until January 9, 2000.

# Four Things to Remember (as December 31 draws near)

A new year will soon be upon us. To help you finish 1999 and the twentieth century in charitable style, here are a few ideas to keep in mind.

- 1. Charitable giving benefits you, as well as the California Academy of Sciences. A special, year-end gift during the season of giving can bring you added pleasure. You will know that your generosity has made a difference. It will help the Academy fill important needs in the community and in the world of science. And, most donors find that there are tax benefits from charitable gifts.
- 2. Appreciated assets can make fine charitable gifts, especially after these years of high returns in the stock market. If you have owned securities or mutual funds for at least a year and a day, you can receive a charitable deduction for full market value of the gift, and you will not have to pay capital gains tax on the appreciation. The more the security has appreciated, the greater the benefit.
- 3. It can make sense to increase your charitable gifts this year. Giving can be accelerated. You can make gifts this year that you might otherwise plan to make next year. There are a couple of reasons why this might make sense:

First, you may be looking at a higher tax bill this year, due to higher than anticipated income. Additional giving this year may create a higher charitable income tax deduction and help reduce your added tax burden.

Second, as you move closer to the end of the year, you may find that you have extra cash or highly appreciated assets on hand and may want to make an advance on your charitable giving plans for the next year.

4. Tax-wise charitable gifts often require advanced action. A stock gift usually takes more time to complete than writing out and mailing a check. That's even truer for a gift of mutual fund shares. So initiate your gift plans as soon as possible to make sure that they are complete for tax purposes by December 31.

The Academy has several informative brochures available on tax-wise giving. To learn more, or to receive these brochures, call Eleanore Levy or Judy Prokupek, in the Development Office, (415) 750-7216, or use the reply coupon on page 14.

#### New and Renewing Donor Circle Members

July and August 1999: \$125 to \$999

Donor Circle membership contributions support the Academy and significantly advance our work in research and education. It is with great pleasure that we gratefully acknowledge these gifts.

Dr. Dorothy Aggeler Ms. Karleen Aghevli & Mr. Jeffrey Olkin Ms. Rose Ellen Alexander Dr. Alan J. Almquist Mr. Fred Altshuler & Ms. Julie Cheever Ms. Rosemary Ames Ms. Nan Crystal Arens & Mr.David C. Kendrick Mr. & Mrs. Rocco Bachhuber Mr. Vladimir V. Baicher & Ms. Joellen Jarvi Ms. Marie Bartee Mr. & Mrs. Hunt Bascom Mr. Michael R. Beasley Mr. Louis de K. Belden Dr. Barbara Bessey & Dr. Kevin Gilmartin Mr. & Mrs. Will B. Betchart Mr. & Mrs. John Blom Mr. & Mrs. Jim Boddy, Jr. Mr. William Bodero & Ms. Patricia Greedy Mr. & Mrs. Philip Bowles, III Mr. & Mrs. Richard D. Brain Mr. Ray Brian Mr. & Mrs. Ron Briggs Mr. Jay Broadwell & Ms. Marjorie Madonne Dr. & Mrs. Bud Bronstein Mr. & Mrs. Evan Brooks Mr. Antonio S. Buangan Ms. Lynne Burwell & Mr. John Robiola Ms. Sara Lee Calhoun Mr. & Mrs. Les Candee Ms. Robin Carpenter Mr. & Mrs. Richard Carson Mr. & Mrs. Lowell Chamberlain Mr. & Mrs. Alger Chaney Mr. & Mrs. Mel Chaplin Ms. Sharon Chester Ms. Betsy Clebsch Mr. Robert F. Collin Ms. Andrea Cooper Reverend D. C. Crummey Mrs. Barbara A. Dales Mr. Jim Degolia & Ms. Terri Hanagan Dr. John V. Dervin Dr. & Mrs. George Desalernos Mr. & Mrs. Everett DeSalles Mr. Charles Dietrich Dr. Barbara Dittmann Dr. & Mrs. Jonathan S. Dixon Mr. & Mrs. Dave Dorn Mr. & Mrs. Mervyn R. Dowd, Jr. Mr. Daniel Drake Mr. Paul R. Dupont Mr. & Mrs. M. H. Durr Mr. Jack Edelman

Mr. James H. Eng, Jr.

Mr. John Clay Evans & Ms. Ana Ames Thompson Mr. & Mrs. Jonathan Faustine Mr. Robert P. Feyer & Ms. Marsha Cohen Mr. & Mrs. Gordon Foster Dr. Nelson Freimer & Dr. Sally Blower Ms. Shirley C. Freund Dr. John G. Galli Mr. & Mrs. Dale Gee Ms. Gloria Getty Mr. Winslow C. Gibson Mr. & Mrs. Clinton Gilliland Ms. Linda Gladstone Mr. Robert G. Glavin Mr. David Goldstein & Ms. Julia Vetromile Ms. Marian C. Gonzalez Mr. Joseph E. Grabiec Mr. & Mrs. Jeffery Griffith Mr. & Mrs. Todd Gritzer Mr. & Mrs. Collier Gwin Mr. Charlie Haas Mr. & Mrs. John Hale Mr. & Mrs. Arthur Halenbeck Mr. & Mrs. Robert B. Hamilton Mr. Fred Hansen Mr. Glenn H. Hartman Ms. Margaret E. Hegg Mr. & Mrs. Gordon Heinrich Mr. & Mrs. Stanley Herzstein Mr. & Mrs. Walter Hoge Mr. & Mrs. Clifford R. Hubbard Mr. & Mrs. Zachary Hulsey Mr. & Mrs. Michael J. Hutnik, III Ms. Kathleen Hynes Mr. & Mrs. Carl W. Jensen Mr. & Mrs. Art Johnson Mr. & Mrs. James P. Johnston Mr. Gerald A. Kane Mr. Robert L. Katz Mr. & Mrs. Stephan Keith Mr. & Mrs. Alson Kemp Mr. & Mrs. Harold Kerster Mr. Bill King & Ms. Nancy Stephens Mr. Gordon J. King & Ms. Carol A. Goldberg Ms. Nancy Kittle & Ms. Ronna Leon Ms. Spring Kraeger & Mr. Lew Schalit Mr. & Mrs. Stephen R. Krajcar Dr. Marion R. Kramer Mr. & Mrs. Matthew I. Kreeger Ms. Melissa Kubiak Mr. & Mrs. Lyman Lacy Mrs. Lewis K. Land L.C. Larson Mr. Stuart Leeb

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#### December

#### Members Holiday Event

We'd like to begin this holiday season by thanking you with a fun evening of entertainment, shopping, music, and light refreshments.

Join us on Wednesday evening, December 8 for an exclusive holiday event just for members. We look forward to seeing you there and wishing you the happiest of holidays and the best in the year 2000.

Entertainment: *The African Queens* at 7:30 pm
The young women in this Oakland-based troupe will burst onstage in a frenzy of joy and unbounded energy. "Mandiani"

The African Queens

is pure celebration, a
West African call-andresponse social dance,
and full of improvised
moves to the insistent
calls of the drummers.

Leslie Carter is the founder and director of this unique African troupe who have a deep love and respect for Africa, and for the art of African dance.

For your shopping pleasure, the **Academy Store** offers a 15%

discount off all purchases in the stores.

Stop by and meet author **Amanda Pumry**, who will be present to sign her beautiful book, *MALA MALA: Pathway* to an African Eden. Her book is a visual journey through a privately owned game reserve renowned for its extravagant beauty and impressive concentration of animals.

Joining Amanda at the Authors table will be the Associate Editor of *California Wild*, **Blake Edgar**, who co-authored the book *From Lucy to Language* with Donald Johanson.

Annual Crafts Fair in African Hall includes excellent handmade gift items produced by talented Academy staff members, for that unique person on your holiday gift list.

December 8, 6:00 pm to 9:00 pm

#### January

#### Rainforest Cultures at the Turn of the Millennium

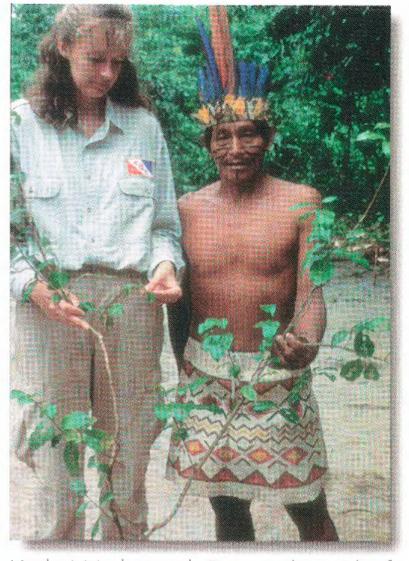
With Karla Wesley, Research Associate, CAS Anthropology Department

Karla Wesley will present a slide/lecture program updating the state of the world's rainforest cultures. Beginning in the Western Hemisphere she'll travel around the globe, identifying the contemporary success stories and the ongoing tragedies of rainforest peoples.

From the Amazon to Southeast Asia and the forests of

Africa, you'll learn some of the untold stories of peoples who live in our greatest regions of biodiversity and discover their contributions to our scientific knowledge of the world's rainforests.

Wesley has been studying and conducting research in the Amazon for the past eight years. She received her M.A. in Anthropology from the University of Alabama based on her thesis of ecotourism and its effects on indigenous



Karla Wesley with Bora Indian Chief.

cultures. She is currently a doctoral student at the University of California at Davis.

January 12 (Wednesday) 2:00 pm & 7:30 pm Morrison Auditorium

#### Upcoming Members' Lectures

February 9, 2000
Melanesia Underwater
with Dr. Gary Williams
March 8, 2000
Russian Megafauna
with M. V. Propp
April 12, 2000
A Wolf: Real or Imagined

Many thanks to the following members who have increased their support of the Academy and its Annual Fund in the last two months:

with Pat Tucker & Bruce Weide

Mr. Eric Barkan Dr. Barbara Bessey & Dr. Kevin Gilmartin Ms. Sophie Breall Jay Broadwell & Marjorie Madonne Diane Brosin & Timothy Machold Ms. Betsy Clebsch Ms. Andrea Cooper Mrs. Rosemarie Ellingson Robert & Carol Freidenberg Ms. Esther Gau Ms. Shirley Groswird Jane & Kevin Hart Gordon & Barbara Heinrich Elizabeth & Zachary Hulsey Mr. & Mrs. Michael Hutnik, III Dr. Matthew Kaser & Dr. Cindy Wikler Thomas & Yumiko Kelley Ms. Nancy Kittle

Richard Locksley & Kari Connolly Edmund & Virginia MacDonald Parker & Mathilde Maddux Deborah & Halsey Minor Mr. Ed Moore Miss Anne Morgan Mr. Richard G. Morris Mr. Henry D. Navas Nathan & Ramona Oliveira Ms. Regina Phelps Matt & Yvonne Rogers Mr. Edward Rojas Mr. Jack Rominger Mr. & Mrs. Albert Schultz George Sery & Rose Campbell Robert Uomini & Louise Bidwell Danny Vu & Hannah An Mr. Philip Yee

# In Retrospect...

By Academy Archivist Michele Wellck

#### 125 Years Ago

January 4, 1875 – At the annual meeting, the vice-president, Gen. John Hewston, read the annual address, giving a statement of the condition and progress of the Academy during 1874. The corresponding secretary reported that the correspondence was becoming more extensive and impor-

tant. The recording secretary reported the average attendance at meetings for the past year as 31; the number of resident members as 301, and of life members, 75. The treasurer reported the balance on hand as \$2,958.43. From the librarian's report it appeared that there were 5000 volumes in the library. Among those elected to office were George Davidson,



Construction of planetarium dome, 1949.

president, and Dr. Albert Kellogg, director of the Museum.

#### 100 Years Ago

December 5, 1899 – In the Board of Trustees, there was an indication of prosperity in the raising of the rent of the small stores on the Academy's property at 815 and 817 Market Street to \$100 per month each.

January 2, 1900 – Officers for the year were declared, including David Starr Jordan as president and Charles A. Keeler as director of the museum. The usual reports, showing the condition and progress of the Academy, were read and placed on file. These included reports by Miss Eastwood, botany, Dr. Eisen, invertebrate zoology, and Mr. Loomis, ornithology.

#### 50 Years Ago

December 1949 – "Last March the News Letter ran a story on the beginning of excavation for the new Hall of Science and the Morrison Planetarium. A lot of building has gone on and up since then. At this moment of writing, in fact, the editor's left eye is witnessing from his window the pouring of the Planetarium's concrete dome"

December 1949 – Two well-known aquariums recently got together to swap fish. One was our own Steinhart, of course;

the other, the aquarium of the San Antonio Zoölogical Society. Making the longest trip by truck carrying fish the Steinhart Aquarium has even attempted, Collector Don Simpson and Biologist Maury Rakowicz drove to Texas by way of Hermosa Beach, California. It was a three-way deal, involving Hermosa's Marineland as well. Salt water fishes

went to San Antonio; fresh water fishes came to us. Our new alligator gars made quite a stir here.

Nearly the largest fish we now have, and by far the meanest, they ripped several nets to shreds being transferred from the truck to an aquarium tank.

January 1950 –
Ticking Off the
Sardines – "A citation
for close cooperation
goes to Dr. W.
Barclay Stephens,

Honorary Curator of Horology, and Thomas Groody, marine biologist who is making a study of sardines. In his observations of sardine behavior, Mr. Groody needed to measure five-second intervals. 'I can't watch my watch and watch the sardines as the same time,' he lamented. A metronome wouldn't do. What he really needed was an alarm clock that would ring every five seconds. Dr. Stephens hand-machined some gears, hooked up a small electric motor, and devised a timer that gently bongs at the proper and required interval. The science of sardines swims on!"

#### 25 Years Ago

December 1974 – "You may be wondering what that enormous Western red cedar log (*Thuja plicata*) is doing in the 'Fountain of Whales' courtyard. Well, here is the exciting answer: one of these days, a Northwest Indian carver (or carvers) will take up CAS residence to begin work on a magnificent totem pole in celebration of the forthcoming Wattis Hall of Man. The great pole will dry out for the next several months and in the summer of next year, the actual carving is planned to begin (for the public to witness) so that our very own, custom-made totem may emerge."



#### **Adult Classes**

#### Life in the Solar System

Lecture

Evidence recently found in meteorites suggests that simple life may have existed on Mars several billion years ago and could conceivably still be there. Several of Jupiter's moons are covered with a rock-hard crust of ice, but enormous, liquid oceans may slosh beneath these frozen surfaces. Could alien fish be swimming in these unseen seas? Search for critters on Mars, the moons of Jupiter and Saturn, and other nearby cosmic habitats.

Seth Shostak January 11 (Tuesday) 7:00 – 9:00 pm \$10 members/\$15 non-members

#### Flora of the Land Down Under-in California

Lecture and Field Trip

Keator introduces the unique flora of Australia's many bioregions: the wind-swept mountains of Tasmania, the tropical forests of Queensland, and the eucalyptus forests and heathlands of the west. Take a field trip to the Santa Cruz Arboretum to see the best collection of Australian plants in California, and learn about the odd insectivorous plants, unusual conifers, bizarre protea relatives, and special pea bushes of the land down under.

Glenn Keator Lectures: January 19 - February 16 (5 Wednesdays) 7:00 - 9:00 pm Field Trip: January 29 (Saturday) 10:00 am - 3:00 pm \$95 members / \$105 non-members

#### Remembering Spring

Spend a winter weekend remembering spring by capturing the essence of flowers and plants in watercolor. Recognized for her vibrant flower and plant compositions, Melcher demonstrates four watercolor techniques that bring her work to life. Practice these techniques in the studio under Melcher's guidance while sharpening observation skills of the natural world. For students with some watercolor experience.

Nell Melcher January 15 and 16 (Saturday and Sunday) 10:00 am – 4:00 pm \$95 members/\$105 non-members

#### Family Class

#### **Ecology of Mount Diablo**

Field Trip

Examine the changes in flora and fauna as you ascend one of the tallest mountains in the Bay Area and pass through chaparral, oak woodland, and Widow Pine belts. At each stop, search for herps (lizards, snakes, and amphibians), and look skyward in search of avian fliers. Giorni explains some of the basic geology of Mount Diablo: its composition, and surrounding formations. At the summit (weather permitting), view a panorama of the entire Bay Area and gaze far off in the distance to see the Sierra Nevada range. Open to families with children eight years and older.

Chris Giorni January 8 (Saturday) 9:00 am - 1:00 pm \$20 adults/\$15 children, members \$25 adults/\$20 children, non-members

#### Benjamin Dean Lecture Series

A forum for emerging theories with some insights into the process of contemporary astronomical research.

The Morrison Planetarium continues its discussion of new, not yet accepted, ideas on the forefront of astronomical research.

#### Dr. Halton Arp

from the Max-Planck-Institut für, Astrophysik, Garching, Germany

It is generally accepted that the universe was created instantly out of nothing and that matter is still exploding away from itself in all directions. An enormous edifice of theory has been built upon this assumption, but, like an inverted pyramid resting on its apex, it all rests on the interpretation that the shifting to the red of the light of faint galaxies means that they are receding from us with speeds that can approach the speed of light.

Dr. Halton Arp is practically a lone voice in the scientific community on the interpretation of the redshift observed in the spectrum of galaxies. For the past 33 years he has been documenting observational evidence showing objects in the same place in space with enormously different redshifts. This has lead him to the logical conclusion that the redshift can not be due to the recessional velocity of that region of space, and a new cause must be discovered.

Dr. Arp shows that if matter is intermittently created in the form of low mass particles and continues to grow in mass as it ages, all the empirical evidence of extra galactic astronomy can be simply satisfied and Einstein's theory of relativity can be generalized so that it predicts the astronomical observations as well as all the well grounded terrestrial physics. He further argues that quasars with high redshifts are recently born, evolve into young galaxies as their intrinsic redshifts decrease, and finally end up as large galaxies like our own with low redshifts appropriate to older age.

This empirical evolutionary sequence for matter has profound implications for our understanding of the nature of physics. It virtually topples the standard Big Bang model and suggests a universe indefinitely old and large, and continually unfolding itself from many points within its static space.

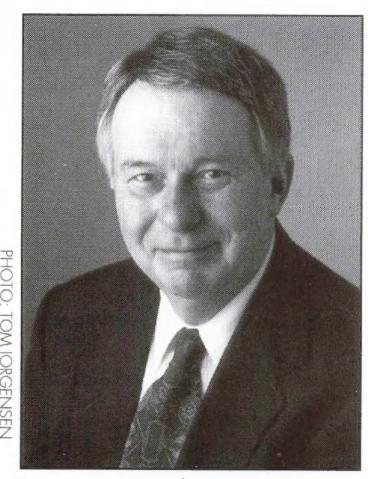
Dr. Arp will be signing his latest book, "Seeing Red:

Redshifts, Cosmology and Academic Science," available at the Academy bookstore.

December 14 (Tuesday) 7:30 pm \$3.00

#### Small Comets and Our Origins: The Ecstasy and the Agony of the Scientific Debate

Dr. Louis Frank from the University of Iowa



Dr. Louis A Frank

In 1981 an ultraviolet camera on board the high-altitude orbiting spacecraft, Dynamics Explorer 1, gave spectacular views of dayglow – the interaction of sunlight with atomic oxygen in Earth's upper atmosphere. But the images had an unexpected feature. The blanket of dayglow was not uniform; it was speckled with dark spots. An intense controversy developed over the interpretation of these

"atomospheric holes." While most of the scientific community quickly dismissed them as "noise," random fluctuations in data due to instrumental malfunction, Dr. Frank interpreted them as an influx of small comets into our atmosphere.

Dr. Frank's proposal was startling: ten million small comets per year, and each comet weighing tens of tons. The existence of such a "cosmic rain" would have enormous consequences. It would suggest our lakes, rivers and oceans were formed by water from outer space. Substances necessary for the origin of life may well have arrived from the heavens. Periodic increases in cometary showers could have caused the ice ages and may have been responsible for the death of many species. Our cherished notion regarding the Earth's isolation from the rest of the universe will have to be discarded. In short, many accepted tenets of physical science would have to be re-examined.

Even though the recently launched Polar spacecraft seems to confirm the reality of the "holes," the comet interpretation is not widely accepted. The turmoil and intellectual battle that it inspired reveals how controversial ideas are handled in the current scientific community.

After the talk, Dr. Frank will be available for a book signing of "The Big Splash," his account detailing his observations and cometary theories.

January 25 (Tuesday), 7:30 pm \$3.00

#### Information hotline: 415-750-7141

These lectures conclude the Fall 1999 Benjamin Dean Lecture Series on "A Forum for Emerging Theories with Some Insights in the Process of Contemporary Astronomical Research." Watch this column for an announcement of the Spring 2000 series which will run February through May 2000.

#### Conversations at the Herbst Theatre

City Arts & Lectures, Inc. presents

#### CALIFORNIA ACADEMY OF SCIENCES

Conversations at the Herbst Theatre 2000

All Programs at 8pm

Thursday January 27

Dr. George Schaller

Director of Science - Wildlife Conservation

Society, Author

The Year of the Gorilla • Serengeti Lion In conversation with Alex Chadwick

The Annual Claire Matzger Lilienthal Distinguished Lecture

Monday February 14 Dr. Jared Diamond

Professor of Physiology, Author

The Third Chimpanzee • Guns, Germs,

and Steel

In Conversation with Roy Eisenhardt

Wednesday March 1 **Timothy Ferris** 

Science Writer, Journalist

The Whole Shebang • Galaxies

In conversation with Michael Malone

Wednesday

**Natalie Angier** 

March 22 Science Correspondent - The New York

Times, Author

Woman; An Intimate Geography • The

Beauty of the Beastly

In conversation with Ellen Greenblatt

Tuesday April 25

Dr. Mark Plotkin

April 25 Ethnobotanist, Author

In Search of Miracles • Tales of a

Shaman's Apprentice

In conversation with Dr. Paul Volberding

Thursday

Sue Hubbell

May 4 Naturalist, Author

Waiting for Aphrodite • A Book of Bees

In conversation with Dr. Samuel M. Taylor

Tuesday

**Paul Theroux** 

May 16 Novelist, Travel Writer

Fresh Air Fiend • The Old Patagonian

Express • The Mosquito Coast

In conversation with Renee Rothmann

This series is made possible, in part, by a grant from the Richard & Rhoda Goldman Fund

For ticket information call City Box Office (415) 392-4400

California Academy of Sciences does not process ticket orders for these lectures.

#### **Educational Programs**



#### African Nights

NEW Planetarium Show!

What skylore, wisdom, and practical knowledge come to us from the "Mother Continent"? See the heavens through the eyes of the Zulu, Xhosa, San, and other peoples of southern Africa, and discover the secrets that can be learned on clear, dark African Nights. Originally written and produced by the staff of the Planetarium of the South African Museum, Cape Town.

This special sky-show will be offered on Saturdays & Sundays only at 3:00 p.m., from October 9, 1999 through January 9, 2000.

For more information, call (415) 750-7141.

#### **Public Programs**

The programs below offer you a chance to experience first hand the wide diversity of art, music, and traditions from Africa, as well as to learn about its diverse ecological landscape. For the most up-to-date schedule, check the Africa page on our website, or call (415) 750-7143.

All programs are free with Academy admission.

#### December 2 (Thursday)

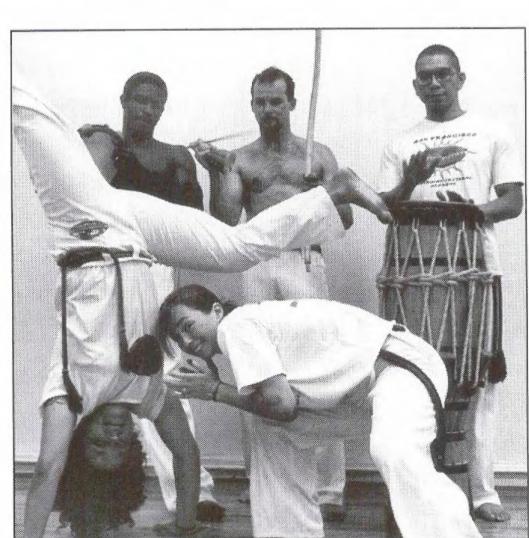
African Wood Carving

Take a close look at the work of a contemporary African sculptor and explore the myths and stories behind each of his artistic creations.

1:00 pm, African Hall

#### December 5 (Sunday)

Capoeira. An Afro-Brazilian martial art Witness the beauty and power of Capoeira. Discover its origins



Grupo Abadá Capoeira

in the tropical forest of Brazil.

This special program is presented in conjunction with Young Audiences of the Bay Area.

1:30 pm,
Auditorium

#### December 7 (Tuesday) & 16 (Thursday)

Frogs of the African Forest

See a preserved 8-pound goliath frog and a live foam-nesting treefrog as we learn about African amphibians and how Academy herpetologists study them.

11:30 am, African Hall

#### December 8 (Wednesday)

African Painting

Watch Nigerian artist Geoffrey I. Nwogu as he paints about life in African villages using traditional styles.

1:00 pm, Cowell Hall

#### December 12 (Sunday)

African Felines

Discover the world of African cats and meet a leopard, caracal and serval. We'll learn about their amazing adaptations and why it is so important to preserve them.

11:30 am & 1:30 pm, Auditorium

#### December 14 (Tuesday)

Congolese Rhythms and Sounds

Experience Congolese music and dance through an interactive demonstration by Sandor Diabonkouezi from Ballet National du Congo.

1:30 pm, Cowell Hall

#### December 19 (Sunday)

African Masks

Nigerian artist Geoffrey I Nwogu will demonstrate the art of African mask making, while conveying the myths and traditional history embedded in this craft.

1:00 pm, African Hall

#### December 28 (Tuesday)

Meet an African Penguin

See a live endangered black-footed penguin and find out what it takes to survive in the waters of South Africa.

12:30 pm & 2:30 pm, Goethe Room



Black-footed Penguin

#### Traditional Arts of the World

All programs take place at 1 pm on select Saturdays in the Morrison Auditorium, unless otherwise noted. Presentations are free after general museum admission. For further information on these and other Traditional Arts Programs, contact Dr. Jennifer Michael in the Anthropology Department at (415) 750-7165. The Traditional Arts Program is funded by the Paul L. and Phyllis Wattis Foundation.

#### December

#### December 4—Hanukkah Stories

Accompanied by music and puppets, storyteller and educator Mimi Greisman will tell the story of the Jewish holiday of Hanukkah and share songs for this December celebration. This program is especially suited for young children and their families.



Members of the Deutscher Musikverein pose after a performance at the Academy of Sciences.

#### December 11—Holiday Concert & Sing-Along

Members of the Deutscher Musikverein brass band return to the Academy for their annual concert of Christmas music from around the world. Get into the holiday spirit and join us in celebrating the joyous sounds of the season (African Hall).

#### Checked out the Academy Café lately?

Grilled sandwiches, fresh salads, bagel bar, sushi, espresso and fresh muffins are just a few of the tasty items you're going to find over the next few months at the Academy Café. In October the Academy changed the management of its café to T.D.S. Foods, Inc., a Bay Area-headquartered food service management company. TDS cafés are known for excellent food preparation and presentation and will help the Academy improve the quality and variety of food without sacrificing affordability. Members will continue to enjoy a 10% discount in the Café by showing their discount card to the cashier.

#### January

January 8—Traditional Japanese Swordsmanship Andrej Diamantstein will demonstrate the traditional martial art of *iaido*, a form of swordsmanship whose principal purpose is to defend against a surprise attack. As a noncombative martial art, iaido is practiced today mainly to cultivate self-discipline, physical coordination, and spirituality.

#### January 15—Barbershop Quartet Singing

Members of the Brass Ring Quartet will discuss the history, technique, and style of barbershop singing and will perform selections from the traditional barbershop repertoire.

#### January 22—Maori Music and Dance

Lorna Martyn brings her dance ensemble Te Maoritanga Rima to the Academy for a special presentation of traditional Maori dance, music, and ritual.

#### January 27 - 30—Special Program on Southwest Silverwork

Visiting the Bay Area from Arizona, Navajo artist Fred Henry demonstrates techniques associated with traditional Southwest jewelry making, including overlay work and the cutting and polishing of stones. (10 am to 4:30 pm daily, Elkus Exhibit Gallery)

#### To our members:

We received numerous reports of late delivery of the October/November newsletter. We investigated the cause of this delay, and learned that due to a large volume of political mail and holiday catalogues, our mail, was held until the other aforementioned mail was sent out. It is at the post office's discretion to determine which mail has priority.

A formal complaint is going to be lodged against the San Francisco Postmaster by other organizations whose mail also was delayed.

Meanwhile, we want to extend our most sincere apologies to you, our members. Many of you called to express your frustration. We share your frustration; we work very hard to arrange for the unique programming that you as members of the Academy have come to expect and enjoy. The October/November newsletter offered particularly unique programs in conjunction with Hispanic Heritage Month and Africa. No one is more disappointed than we are that you could not take advantage of these offerings. Where possible, we hope to reschedule some of the programs that were missed.

Thank you for your patience.

orrison Planetarium ushers in the year 2000 with two shows - one a seasonal favorite, and one brand new! The Christmas Star delves into various aspects of astronomy and the history of sky watching, making good use of our Star Projector. Starting January 14, come and find out which astronomical events the informed stargazer will be looking "up" for during the New Year in Almanac 2000. And with the Planetarium projector's ability to show the sky thousands of years into the past or future, it has proven itself to be Y2K compliant (and Y3K compliant, and Y4K compliant. . .).



"The Christmas Star" by Lynette Cook

#### Sky Shows

#### The Christmas Star

December 10, 1999 - January 9, 2000

An annual tradition and an audience favorite! What was the mysterious object seen in the sky 2000 years ago that heralded the beginning of a new age? A comet? An exploding star? Something else?

#### Almanac 2000

January 14 - March 12

What celestial sights will we be seeing during the coming year? Solar eclipses? Planetary groupings? Meteor storms? Find out in this preview of the year's skywatching highlights!

#### Mysteries of the Millennia

October 1, 1999 - June 11, 2000

What cosmic mysteries wait to be solved as we enter the 21st Century? How has our understanding of our place in the Universe changed with the coming of each new millennium?

#### African Nights

October 2, 1999 - January 9, 2000

Isilimela...Naka...Is'Ihlangene...familiar objects in the sky, but from a traditional African perspective. What skylore comes to us from the "Mother Continent"? Presented in conjunction with *Africa: One Continent. Many Worlds*.

#### Neighbors in Space

Ongoing

In this family show, the cosmic cartoon critter, Moon Mouse, leads an exploration of the Sun, Moon, and the planets of the solar system. Neighbors in Space is offered in the morning for the convenience of Members with younger children.

#### The Sky Tonight

Ongoing

A relaxing tour of the current night sky, focusing on constellations, visible planets, the phase of the Moon, and upcoming celestial events visible with the unaided eye. This is our most free-form presentation, where the sky is the "star of the show."

#### December - January Sky Show Schedule

Sky Show	Weekdays	Weekends
December 1 - December 5		
Neighbors in Space		11 am
Mysteries of the Millennia	2 pm	12 & 2 pm
Tales of the Twilight	1 pm	
African Nights		3 pm
The Sky Tonight		4 pm
Laserium	5 pm	
Please note that the Plane December 6 – 9 for show		closed
December 10 - January 9		
Neighbors in Space		11 am
The Christmas Star	2 pm	12 & 2 pm
Mysteries of the Millennic	1	1 pm

Neighbors in Space		ll am
The Christmas Star	2 pm	12 & 2 pm
Mysteries of the Millenni	1 pm	
African Nights	3 pm	
The Sky Tonight	4 pm	
Laserium	5 pm	

Additional shows will be added from December 27–31. Call (415) 750-7141 for details. Please note that the Planetarium will be closed December 25, Christmas Day.

#### January 14 - January 31

Neighbors in Space	11 am
Almanac 2000 2 pm	12 & 2 pm
Mysteries of the Millennia	1 & 4 pm
The Sky Tonight	3 pm
Laserium	5 pm

Please note that Morrison Planetarium will be closed from January 10-13 for show installation.

# Summer Tales from the Junior Academy

The soaring granite peaks of the Sierra Nevada's Desolation Wilderness area awaited this summer's first Camp Academy

backpacking trip. Ten Junior
Academy students and ten
students from the San Francisco Recreation and Park
Department's Argonne Playground shared a base camp off
Highway 50 before crossing
Echo Lake by boat and setting
out in different directions to
explore pristine trails, mountain
lakes and streams. Lake Aloha
proved to be the perfect
swimming spot while sleeping
pads found new use as ideal



Heading out on the trail.

sleds over fields still covered with snow. Basic backpacking skills learned the first night were put to immediate use the second night when a fierce mountain hailstorm sent everyone scurrying to build shelters. Clear skies soon followed, though,

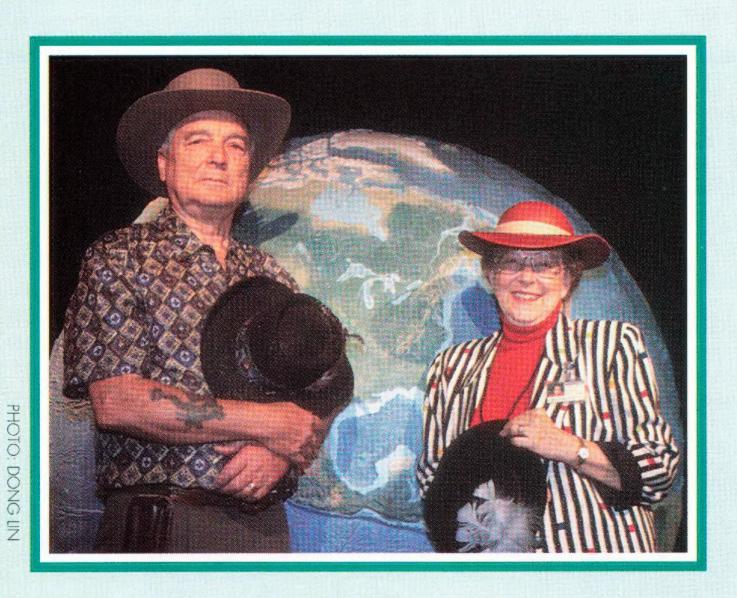
and journals were quickly filled with sketches and descriptions of birds, beautiful wildflowers, pond critters, and

star-filled nights as the students developed an understanding of and an appreciation for the ecology of the Sierra Nevada.

Funded in part by Bank of America-Giannini Foundation and Best Buy Children's Foundation, Camp Academy engages students in field-based activities that provide them with a close-up look at the natural world and instills in them a sense of wonder and curiosity about the world around them.

Look for more summer tales in our next newsletter. For information about our winter classes, please call our hotline (415) 750-7575.

#### Outstanding Volunteers



Ann and Walt Weybright, shown here with just a few of the many hats they wear as Academy Volunteers, are both natives of Idaho but have been in California for over 30 years. After retiring from their respective occupations (Walt as Financial Vice President of the S.F. Furniture Mart and Ann as a cost accountant, and later the owner of a retail gift store). Ann began volunteering in the Academy library. Later she worked on the fabrication of the Life Through Time Hall and making realistic plant specimens; helping with Membership activities; and taking a regular shift at the Information Desk.

Walt soon decided she was having way too much fun, and signed up as a volunteer, too. Together, they have become very proficient at blowing up balloons, arranging flowers and putting legs on pink plastic flamingos for Special Events; but one of their

most valued skills is the speed at which they can assemble a large mailing. Walt claims 600 pieces an hour, and we have no reason to doubt him. Their flying fingers can make short work of a tedious task.

We plan our projects around their travel schedule, as Ann and Walt are enthusiastic globe-trotters. In recent years they have been to Eastern Russia, the South Pacific, Alaska, South America, traveled extensively in Australia, took a 3½ month cruise around the world, and took a trip to Papua, New Guinea. We can hardly wait to hear what's next. They don't stay put for long! When they're home, the Weybrights make and sell crafts and novelty items such as unusual clocks, wooden objects and needlepoint at local fairs. You can see some of their wares at the Academy's annual Holiday Craft Fair and Members' Shopping Eve on Wednesday, December 8th, from 6-9 p.m. And keep an eye out for this energetic couple around the Academy. They're apt to turn up anywhere help is needed!

ORDER FORM

Order Form					
YOUR NAME:AddressCityMember #	State	Zip		DONATIONS  I would like to support the Academy of Sciences with a donation. \$	
ADULT & FAMILY EDUCATION  Life in the Solar System  January 11  Flora of the Land Down Under - In CA  Lectures: January 19 - February 16	X\$10 X\$95	Qty/Non-members X\$15 X\$105	Total =	Please send me your year-end tax-wise giving brochures.  GIFT MEMBERSHIP FORM  \$60 Family or Grandparent  I wish to give a gift membership to:  Address	
Field Trip: January 29  Remembering Spring January 15 & 16  Ecology of Mount Diablo Field Trip: January 8	X\$95 X\$20 adults X\$15 children	X\$105 X\$25 adults X\$20 children	=	StateZipPhone( )Phone( )	
B. DEAN LECTURES  Dr. Halton Arp  Small Comets and Our Origins  JUNIOR ACADEMY  Please call (415) 750-7100 for class	Qty/Members X\$3 X\$3 catalog.	Qty/Non-members	Total	Card Number Exp. Date  Daytime Phone  Mail payment and order form to: Membership Office, Ticket Services, California Academy of Sciences, Golden Gate Park, San Francisco, CA 94118-4599.  Include a self-addressed, stamped envelope for each series to which you subscribe.  No refunds/exchanges.	

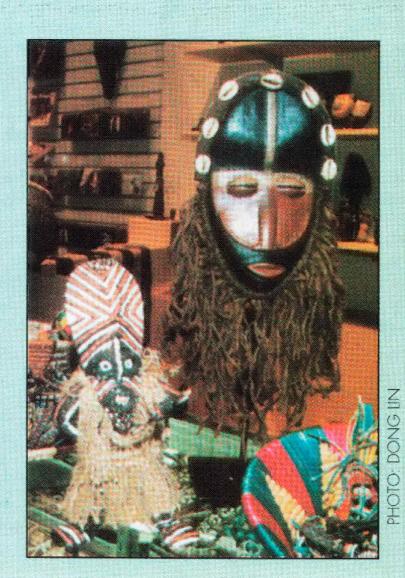
# Give a Gift from AFRICA this Holiday Season

Searching for the perfect gift this holiday season? Well, look no farther than the Academy's store in the AFRICA exhibit where shoppers can find unique hand-crafted objects made by African artists using traditional skills that are passed down from generation to generation.

The store offers an impressive collection of one-of-a-kind objects imported

from Africa including large and small Bamana Gourd boxes from Mali used to store clothes, food, jewelry, incense, or perfume; bottlecap folk art in the shape of giraffes and snakes; baskets from Swaziland and Burkino-Faso; a variety of musical instruments including drums, rattles, and thumb pianos; a vast collection of jewelry, bags, music, books, and wood carved objects made by members of the nomadic Tuareg tribe.

To view examples of store items online, visit our website at www.calacademy.org. Proceeds from the sale of products in the AFRICA store return to the artists.



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#### Travel

#### Passage Through the Great Lakes Aboard the 90-passenger *Le Levant*

June 30 – July 8, 2000 with Patrick Kociolek

The Great Lakes constitute the largest body of freshwater in the world. And yet most Americans have never explored their history, experienced the culture along their shores, nor witnessed the breathtaking natural beauty.

The Academy invites you to take an in-depth look at the Great Lakes region, focus of a spectacular journey from Chicago to Toronto. Follow the route of early voyageurs north toward Lake Superior to visit the pristine Canadian wilderness outside Sault Ste. Marie. On Lake Huron, discover a Native American community thriving on Manitoulin Island and cruise among weirdly-eroded formations at Flowerpot Island in Georgian Bay. Visit the Henry Ford Museum and Greenfield Village on Lake Erie, and get a close look at the power of Niagara Falls from the Maid of the Mist. As always, specially-arranged guided tours and private visits will enhance the journey.

Cost: \$3,690 - \$5,190 per person (based on double occupancy) + airfare.

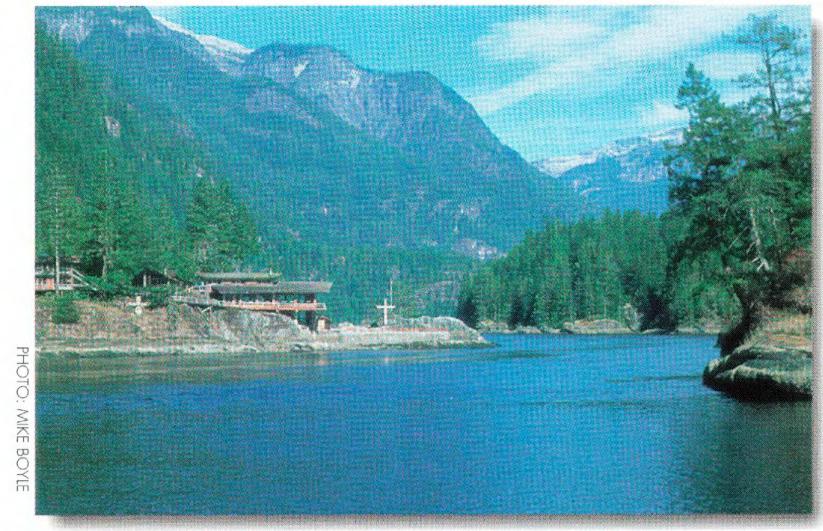


Niagara Falls

# Exploring Nature and History in the Pacific Northwest

September 11-18, 2000 Aboard the Sea Lion

The island-studded waters of the Pacific Northwest are an often overlooked place of tranquil beauty and surprising diversity. Your voyage begins in Vancouver, a vibrant port city set against a backdrop of snowcapped mountains. You have a day to cruise the length of spectacular Princess Louisa Inlet, one of the most beautiful fjords in all of North America. You explore Johnstone Strait, one of the major areas for orcas in the Northern Hemisphere, as well as the Gulf Islands and



Entrance to Princess Louisa Inlet in British Columbia.

inlets of British Columbia, looking for whales, dolphins and other wildlife. At the charming city of Victoria, you visit the renowned Butchart Gardens and the excellent Royal British Columbia Museum, with exhibits of Pacific Northwest habitats and Native American cultures. You spend a glorious day in the San Juan Islands, an archipelago of some 170 idyllic, forested islands before sailing into Seattle, one of North America's most beautiful cities.

Cost: \$2,220 - \$3,530 per person (based on double occupancy) + airfare.

#### Himalayan Kingdoms: Tibet, Nepal and Bhutan

October 13 – November 1, 2000 with Nina Jablonski

You begin this extraordinary trip in Kathmandu, a delightful jolt to the heart and senses. Next, one of the world's most astonishing mountain flights takes you past Mount Everest, up and over the Himalaya to the Tibetan Plateau. Then it is on to Lhasa, the city hero-explorer Sven Hedin, George Mallory and Cosmo de Koros considered "the furthest goal of travel."

Lhasa's Potala Palace is a testimonial to the buddhism that enriches every moment of Tibetan life. You visit the Jokhang temple, Tibet's spiritual center, and stroll in the city's old quarter, the Barkhor. You will drive over the 15,700-foot Khamba La, past cobalt lakes and ice peaks, to Shigatse's grand and gilded Tashilumpo Monastery and Gyantse's architectural masterpiece, the Kumbum. From Kathmandu another breathtaking flight delivers us to the Dragon Kingdom of Bhutan for six days of focused wandering.

Cost: \$7985 per person (based on double occupancy) + airfare.

PLEASE NOTE: The price quoted for our Galapagos trip in our last newsletter was incorrect. The correct price is \$5,190 perperson (based on double occupancy) + airfare.

For further information on these fascinating and exciting trips, please call Kathie Harvey in the Academy Travel Office at (800) 853-9372.



#### December

# 2 Thursday

African Wood Carving 1 pm (p. 10)

# 4 Saturday

Hanukkah Stories 1 pm (Trad. Art, p. 11)

# 5 Sunday

Capoeira 1:30 pm (p. 10)

# 7 Tuesday

Frogs of the African Forest 11:30 am (p. 10)

# 8 Wednesday

African Painting 1 pm (p. 10)

Members Holiday Event 6 - 9 pm (p. 6)

# 11 Saturday

Holiday Concert & Sing-Along 1 pm (Trad. Arts, p. 11)

# 12 Sunday

African Felines 11:30 am & 1:30 pm (p. 10)

# 14 Tuesday

Congolese Rhythms and Sounds 1:30 pm (p. 10)

Dr. Halton Arp 7:30 pm (p. 8)

# 16 Thursday

Frogs of the African Forest see Dec. 7

# 19 Sunday

African Masks 1 pm (p. 10)

# 25 Saturday

California Academy of Sciences is OPEN. (No Sky Shows)

# 28 Tuesday

Meet an African Penguin 12:30 pm & 2:30 pm (p. 10)

#### January

# 1 Saturday

California Academy of Sciences is OPEN.

# 8 Saturday

Ecology of Mount Diablo 9 am - 1 pm (p. 8)

Japanese Swordsmanship 1 pm (Trad. Arts, p. 11)

# 9 Sunday

Africa: One Continent. Many Worlds. closes

# 11 Tuesday

Life in the Solar System 7 - 9 pm (p. 8)

# 12 Wednesday

Rainforest Cultures/Millenium 2 pm & 7:30 pm (p. 6)

# 15 Saturday

Remembering Spring 10 am - 4 pm (p. 8)

Barbershop Quartet Singing 1 pm (Trad. Arts, p. 11)

# 16 Sunday

Remembering Spring 10 am - 4 pm (p. 8)

# 19 Wednesday

Flora of the Land Down Under 7-9 pm (p. 8)

# 22 Saturday

Maori Music and Dance 1 pm (Trad. Arts, p. 11)

# 25 Tuesday

Small Comets and Our Origins 7:30 pm (p. 9)

# 26 Wednesday

Flora of the Land Down Under 7 - 9 pm (p. 8)

# 27 Thursday

Conversations at the Herbst 8 pm (p. 9)

Southwest Silverwork 10 am - 4:30 pm (Trad. Arts, p. 11)

# 28 Friday

Southwest Silverwork see Jan. 27

# 29 Saturday

Flora of the Land Down Under 10 am - 3 pm (p. 8)

Southwest Silverwork see Jan. 27

# 30 Sunday

Southwest Silverwork see Jan. 27

# VISITOR INFORMATION

**Special Exhibitions:**The Elkus Collection

ongoing AFRICA

through January 9, 2000

EARTHQUAKE permanent exhibit

Witness ongoing

Feeding Times:
Fish Roundabout, 1:30 pm
Penguins, 11:30 am & 4 pm

Guided Tours:

Free one-hour highlight tours daily

Laserium Shows: Call for information (415) 750-7138

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First Wed. of each month

Open every day of the year.

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Information Hotline: (415) 750-7145

World Wide Website: www.calacademy.org

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Academy Store: 750-7410
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Biodiversity Center: 750-7361
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